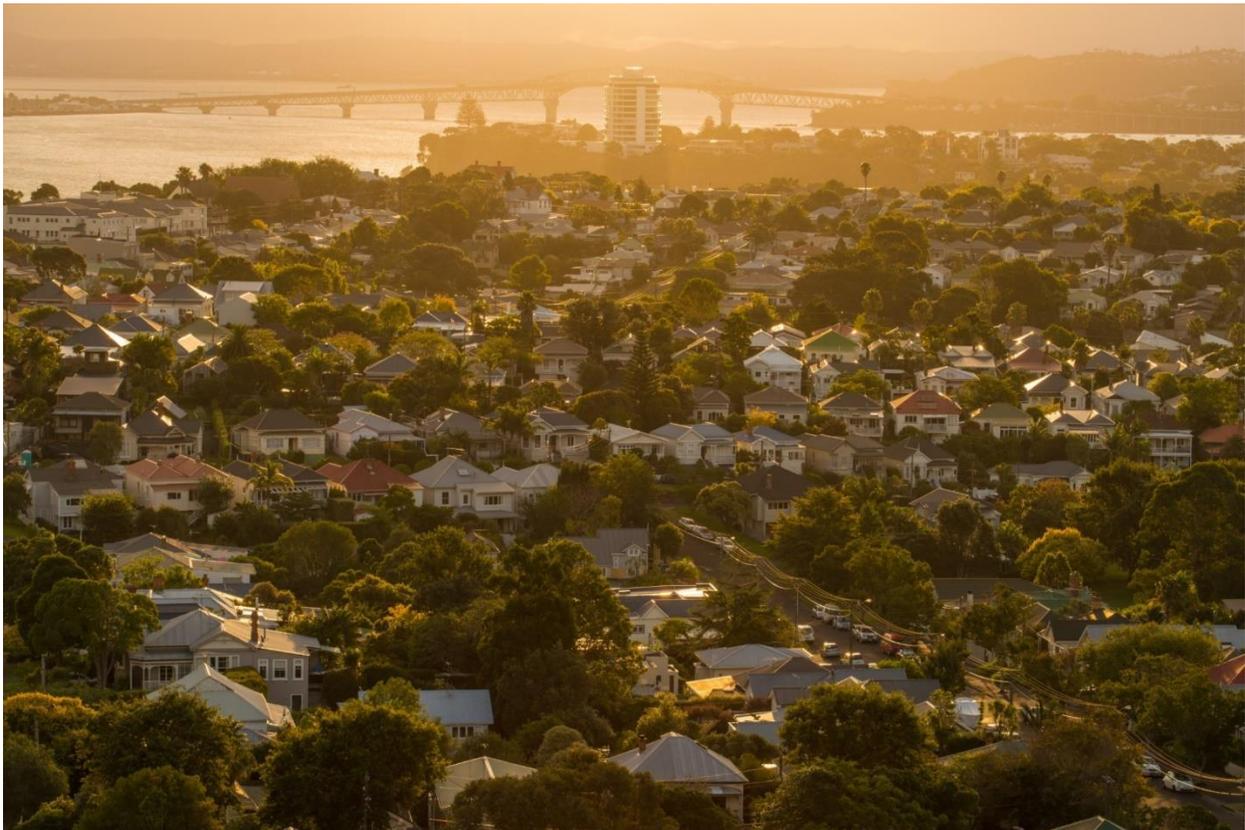


Chorus submission on “Fibre input methodologies – Further consultation draft (initial value of financial loss asset)”

10 September 2020



EXECUTIVE SUMMARY

Overview

1. This is Chorus' submission on the Commerce Commission's (**Commission**) 13 August 2020 fibre input methodologies *Further consultation draft (initial value of financial loss asset) reasons paper (Reasons paper)* and *Further consultation – initial value of financial loss asset - Fibre Input Methodologies Determination 2020 (Draft FLA IMs)*.
2. We urge the Commission to ensure its decisions on the estimation of the financial losses asset (**FLA**) are part of a holistic view of the outcomes that will arise from the Input Methodology (**IM**) process and the Price Quality Determination (**PQD**) process to follow. The outcomes should deliver on Parliament's objective for the new fibre regulatory framework - to provide a no-shock transition to the regime for consumers and investors. For consumers, this is designed through the setting of anchor services. For investors, this is in reflecting the real risks they faced and ensuring recovery of a fair return on and of that investment through a revenue cap. For both consumers and investors, the regime should contain, without distortion, flexibility and investment incentives to meet the ever-changing demands of the end-user, commercial and technological environment.¹
3. As consultations have shown to date, there are numerous judgments within and across the IM process and PQD processes. Within this there are a multitude of considerations that will "add up" to establishing a starting regulated asset base (**RAB**), maximum allowable revenue (**MAR**) and incentives signalled ahead. It is essential to ensure throughout each step of the process that a sensible and workable outcome is delivered for real world investors and consumers.
4. In our response, we have therefore sought to discuss and comment on issues relating to the FLA in their entirety, rather than solely on the single parameter being consulted on as part of this consultation. For example, we have also commented on the key cost of capital parameters, compensation for Type II asymmetric risk, and the treatment of Crown financing on the basis that only when viewed together can an assessment be made of whether risk is being appropriately compensated for in the estimation of the FLA.
5. It is critical to recognise the context of these decisions. In particular:
 - 5.1. In 2011 Chorus investors signed the UFB contracts, agreed prices, accepted the contractual and construction risk, and undertook long-term financing based on the contractual term. There was no ability to renegotiate any of the risks or undertake refinancing annually over the period.
 - 5.2. The purpose of this regime is to transition from a contractual environment into a utility regulatory model. This regulatory exercise is not a reaction to solving particular problems in the market, but rather to transition to a more enduring arrangement. In fact, the real risks are creating regulatory distortions that may undo many of the positive incentives currently present to compete for uptake,

¹ Telecommunications (New Regulatory Framework) Amendment Bill, First Reading Speech, Minister of Communications https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20170816_20170816_28.

innovate new products, and continuously drive for improvements in customer experience and efficiencies – which consumers are benefitting from.

- 5.3. Unlike forward-looking decisions, Chorus cannot adapt to incentives set by these decisions. Under-estimating Chorus' financial losses would represent a one-off expropriation of value from those willing to invest ahead of demand in critical infrastructure.
 - 5.4. Price capped anchor and mandatory services, and competition from other access technologies, ensure that end-users are protected from price shocks.
 - 5.5. Recognising real investor risks (and a no shock transition to a utility model at a time when we continue with significant investment), and the built-in protection of an anchor product (constraining non anchor services facing real market dynamics while enabling flexibility to work in those dynamics) presents the opportunity for outcomes that support investors and consumers.
6. The investment in a once-in-a-generation multi-billion-dollar infrastructure project has involved significant risk for investors. In order to best preserve investor confidence in the regime, consistent with the purpose in section 162(a) of the Telecommunications Act (**Act**), the methodology used by the Commission to calculate the FLA cannot pretend the risks borne by Chorus in participating in this project did not exist. The Commission's proposed approach is inconsistent with the economic principles established for the development of IMs and underestimates the value of the FLA, as:
- 6.1. The opportunity cost of capital that the Commission intends to estimate will fail to recognise or compensate investors for the significant risks faced when the investment was undertaken in 2011.
 - 6.2. The estimate of the benefit of Crown Infrastructure Partnership (**CIP**) financing fails to compensate investors for the residual risk borne by Chorus.

UFB network and risks to investors

7. The UFB network is the backbone of New Zealand's telecommunications network supporting our social and economic resilience. The creation of Chorus as an open access wholesaler in 2011 and our investment ahead of demand in fibre infrastructure has resulted in a range of new products and services, as well as a congestion-free network that has been shown to be of significant benefit to end-users. New Zealand's fibre access network is the envy of many globally and there is now 60% uptake of the service in the community, with data growth of nearly 2000% by New Zealanders since 2011,² as well as product innovation like Hyperfibre.
8. While we are in a position to reflect on the benefits the network provides today, this is not the backdrop under which Chorus investors entered into the UFB agreements. Nearly a decade ago, forecast uptake for fibre was predicted to be significantly lower. The Government was required to issue a formal Government Policy Statement (**GPS**) to reassure investors that they ultimately would have the opportunity to be

² Commerce Commission 2019 Annual Telecommunications Monitoring Report, *Fixed monthly data use per broadband connection (GB)*, 12 March 2020, p 6 (2011), Chorus (2020).

compensated for the risks of taking on the build of, and investment in, the fibre network.³

9. We have faced, and successfully managed, significant risks that go well beyond those experienced in standard regulated infrastructure investments. These risks apply to both the pre-implementation and post-implementation periods. As a proactive wholesale-only provider of services our commercial incentives to promote and transition to fibre have also been well aligned with achieving socially beneficial outcomes for consumers. We have looked to minimise the costs of deployment (productive efficiency), service those customers who value the service most (allocative efficiency) and provide these services at the earliest possible time (dynamic efficiency).

The Commission's approach fails to compensate for investor risks

10. We understand the challenge the Commission faces in developing IMs in the current context. There are limited precedents for dealing with this type of investment and, in particular, estimating the initial value of the FLA. It requires new thinking beyond the standard regulatory approach to account for risks associated with this unique investment – risks that investors took and risks that consumers benefit from. It is important to remember that the Commission's role is to determine actual losses, not the losses of a hypothetical firm or, with the benefit of hindsight to assume away the risk.
11. The current regulatory framework developed by the Commission over the pre-implementation period treats risk as if it has disappeared due to the decision to include the FLA. Further, it exposes investors to a form of asymmetric regulation – an “unfair bet”. Returns are now being capped through the introduction of regulation when the project is successful, but no recognition is being provided for the real potential that things could have turned out differently. Just because asset stranding was avoided, does not mean that a material risk did not exist.
12. We urge the Commission to consider carefully the reality of the journey that's unfolded since 2011. The risk taken on by investors in 2011 must be properly compensated, and there should be recognition given to Chorus' effective management of risks and the strong incentives to deliver services efficiently to consumers. The approach currently does not deliver on the Commission's key economic principles of real financial capital maintenance (**FCM**), efficient risk allocation, and recognising the asymmetric consequences of over- and under-investment.

Fibre IMs should incentivise dynamic efficiency

13. A significant benefit of competitive markets is their ability to deliver dynamic efficiency, which we consider is particularly important in telecommunications, where there is ongoing technological progress and innovation resulting in the delivery of improved services to customers.
14. The fibre IMs should continue to provide us with the right incentives to further drive connections and improve the products and services we offer to customers. Outcomes

³ New Zealand Government, 12 October 2011, *Statement to the Commerce Commission concerning incentives for businesses to invest in ultra-fast broadband infrastructure*, New Zealand Gazette (No 155, p 4,440, Notice No 7120.

that are of benefit to consumers should also result in higher average revenue per user (**ARPU**) to Chorus. Unlike the Part 4 regime, the anchor product acts to protect consumers from unilateral price increases resulting from a higher MAR and means that the Commission can properly recognise the real risk faced by investors without this resulting in price increases to consumers.

15. The Commission's approach to estimating the FLA, and whether it is reasonable and reflects a proper consideration of the risks borne, will send a strong signal about how it will regulate the sector. By providing a signal for future decisions, the approach of the Commission will have a significant impact on forward-looking incentives for fibre fixed line access services (**FFLAS**), as well as potentially profoundly influencing investment in other sectors.
16. To have investors in the position of being penalised after the fact for wearing the risk and managing the project efficiently on the basis that the network is now built would send a chilling message to the investment community, both domestic and international. This at a time where private investment and business confidence is more important than ever – and so is the ability to live, learn and work with greater reliance on digital connectivity.

Key Issues in estimating the FLA

Change to valuation methodology

17. We support the Commission's decision to move to a Discounted Cash Flow (**DCF**) methodology for calculating pre-implementation losses on the basis that this is a well-understood analysis for valuation and should provide the same result as the Building Blocks Methodology (**BBM**) proposed previously.
18. However, using multiple cost of capital estimates, as proposed by the Commission, means that the DCF approach will not give the same results as the BBM approach. Furthermore, given that investors committed to the UFB investment in 2011, at least until 2020, the proposed ongoing estimation using a new cost of capital estimate in each year is inappropriate. It also appears to yield an estimated cost of debt that is below our actual cost of debt over most years of the pre-implementation period.
19. If the Commission is not persuaded that a single cost of capital reflects the nature of the investment decision, then the term of the risk-free rate used for that calculation should be consistent with the 10-year timeframe over which commercial investors undertaking a long-term investment would have evaluated the return. A 10-year term of the risk-free rate is recommended by the Body of European Regulators for Electronic Communications and also many Australian regulators, to match the long life of the essential infrastructure. The Commission's 5-year term is not in line with commercial reality or overseas regulators' views.
20. The Commission's justification for using a 5-year term reflects it viewing the investment as an investment in regulated assets, rather than considering the specific nature of the investment decision.

Cost of capital in the pre-implementation period

21. As outlined above, it is essential that the calculation of the FLA is looked at in a holistic manner. Parameters like the term of the risk-free rate cannot be looked at in isolation. Therefore, in estimating the cost of capital to calculate the FLA we ask that the following amendments are made:
- 21.1. **Term of the risk-free rate** – This should be aligned with the period of the initial contract with the Government, which is consistent with the decision to invest under the UFB initiative.⁴ If the Commission does not accept that the decision was made in 2011, then the term should be 10 years, consistent with commercial practice. This is opposed to the 5-year term assumed by the Commission, the latter of which is aligned with its standard forward-looking regulatory approach, which is not relevant here.
 - 21.2. **Asset Beta** – This should be higher than the asset beta post-implementation to reflect the investor risks that existed in 2011. Our experts have previously suggested 0.65 based on the evidence available, rather than the 0.49 proposed by the Commission.⁵
 - 21.3. **Leverage** – Leverage during the construction period is typically higher, and our experts have suggested 40% is reasonable for the pre-implementation period.⁶
 - 21.4. **TAMRP** – We agree that if the Commission uses an annual update that the TAMRP should increase to 7.5% in 2019. However, as it is unlikely that any event has moved the TAMRP from 7.0% to 7.5% immediately, it would be appropriate to adopt an estimate of 7.25% for the TAMRP from 2017 to 2019.
 - 21.5. **Debt premium** – Based on independent expert advice, the appropriate credit rating for the debt risk premium in the pre-implementation period is BBB.⁷
 - 21.6. **Type II asymmetric risks** – The asymmetric returns and truncation that arises from stranding risks and exists for new large infrastructure investments that are subject to regulation, should be recognised in the pre-implementation period. This should be done by an *ex-ante* allowance, which based on stranding risks alone, our independent economic experts advise is 59bps.
 - 21.7. **Mid-point estimate vs 75th percentile** – A 75th percentile estimate should be used rather than the mid-point estimate, to reflect the reasonable expectations investors would have held in May 2011 of a normal return over time. Further, this estimate should be used to account for the risks of under-estimation in the pre-implementation period, which we show is occurring based on cross-checks with our prevailing cost of debt. This is critical given that this is not a forward-

⁴ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [13-14].

⁵ Sapere (27 January 2020) *The cost of capital input methodologies for fibre*, at [74].

⁶ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [39].

⁷ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [39].

looking decision and a risk of under-estimation is not something that Chorus can seek to mitigate in any way.

Treatment of Crown Financing

22. The Commission's revised proposal fails to reflect that Crown financing was not costless, because Chorus bears a residual risk in relation to Crown financing, and therefore it is appropriate that the FLA reflect this.
23. It is particularly concerning that the Commission has departed at a late stage, and in the absence of any new evidence, from its November draft decision. This clearly recognised that the funding provided to Chorus was fundamentally debt-like, meaning that Chorus has carried a residual risk in relation to Crown financing, which the Commission's own expert, Dr Lally, agreed with.

The treatment of pre-2011 assets

24. We support the Commission's thorough analysis of the status of pre-2011 assets and reiteration of its November draft decision position to take into account accumulated unrecovered returns on pre-2011 investments provided the returns related to the period between Dec 2011 to 1 Jan 2022 (implementation date). However, we disagree that the inclusion of pre-2011 assets is a matter of discretion for the Commission. Our view is it is required by section 177 of the Act.
25. As noted by the Commission, this approach aligns to the context under which Chorus partnered with the Government, which clearly anticipated that this approach would enable efficiencies from the use of existing assets. The regulatory framework should reward the efficient use of existing and shared assets (with appropriate cost allocation).

Cost allocation

26. No further restrictions on pre-2011 assets are required, as existing tools are sufficient to address the potential for windfall gains and make best use of currently available data. The additional measures proposed would not be consistent with FCM and risk creating inconsistent allocations.
27. The Commission notes the use of the shared cost cap as a safeguard; however, we disagree with the Commission's proposed approach of a shared cost cap as it imposes considerable uncertainty. The shared cost cap has particular practical difficulties when applied to the pre-implementation period, with any assessment made for this period being highly speculative.

1. INTRODUCTION

1. The regulatory framework developed to establish the FLA is a crucial component in determining the opening value of RAB that will apply when regulation commences. Whether the Commission's approach to this task is reasonable and reflects a proper consideration of the risks borne by investors in 2011 will send a strong signal to existing and potential infrastructure investors.
2. Based on the Reasons paper, Chorus is concerned the Commission has not properly taken into account risks associated with this unique investment – risks that investors took in 2011 and risks that consumers have benefited from. The Commission has adopted a standard forward-looking approach for dealing with traditional regulated infrastructure investments and treated the 2011 risks as if they have disappeared due to the decision now made to calculate the FLA.
3. While firms subject to forward-looking decisions may not always agree with those decisions, they can act on the incentives provided. In this case Chorus has no such option. Getting the decision wrong risks a one-off expropriation of value. Given this risk, the Commission should seek to err strongly on the side of caution, particularly given that end-users remain protected through the anchor service mechanism designed specifically for this purpose.
4. We are concerned that current draft IMs will not support the right framework for innovation and investment. As we have explained above, the estimation of the FLA must be considered in its entirety. Therefore, we address the specific issues the Commission has raised in the Reasons paper and the fundamental issues that go to the value of the FLA. For example, the key cost of capital parameters, compensation for Type II asymmetric risk, and the treatment of Crown financing. Our submission is structured as follows:
 - 4.1. **Section 2** outlines our concerns with the regulatory framework for estimating the FLA, noting that the Commission has not accounted for risks investors faced in 2011 and may have introduced a form of asymmetric regulation;
 - 4.2. **Section 3** highlights that while we agree with the move to the DCF approach, we don't believe that annual updating of the loss involving a new cost of capital estimate each year is correct, and a constant rate of return is necessary to reflect the decision of investors in 2011;
 - 4.3. **Section 4** examines the cost of capital estimate for the pre-implementation period, noting that these parameters cannot be looked at in isolation, and assesses that a term of the risk-free rate of 5 years is too short, the debt risk premium should be based on a BBB credit rating, systematic and asymmetric risks have not been properly accounted for by the Commission, and any estimates should be based on a 75th percentile estimate;
 - 4.4. **Section 5** demonstrates that Chorus bears a residual risk in relation to Crown financing, and that the FLA should reflect this;

- 4.5. **Section 6** outlines our treatment of pre-2011 assets and how costs are allocated across our copper and fibre networks;
- 4.6. **Section 7** comments on other matters raised by the Commission, including the treatment of the NSI fund, post-tax cost vs vanilla cost of capital, interest during construction and the forecast used for the initial RAB;
- 4.7. **Appendix 1** answers specific questions posed by the Commission about cost allocation;
- 4.8. **Appendix 2** provides our proposed changes to drafting of the IMs;
- 4.9. **Appendix 3** (submitted as a separate document) is a workbook outlining our proposed amendments to the Commission’s workbook as outlined below in our comments regarding the use of a post-tax cost of capital; and
- 4.10. **Appendix 4** (submitted as a separate document) is a report from economic advisors, Sapere.

2. REGULATORY FRAMEWORK

28. The Commission’s regulatory framework established for estimating the FLA is inconsistent with key economic principles and does not achieve outcomes for the long-term benefits of end-users.
29. In particular:
 - 29.1. It does not reflect the significant risks faced by investors in 2011;
 - 29.2. It is introducing an asymmetry in the regulation of Chorus, as it treats risks over the pre-implementation period as if they disappeared due to the decision now made to calculate a financial loss;
 - 29.3. It does not recognise Chorus’ effective management of risks and that through our commercial incentives to deal with those risks that we have achieved socially desirable outcomes;
 - 29.4. Reflects a standard regulatory approach to dealing with traditional assets when a new approach is required to address the unique circumstances surrounding the fibre access network investment; and
 - 29.5. It does not properly address the importance of dynamic efficiency, and in doing so the Commission is in danger of sending signals that will adversely affect forward-looking incentives for FFLAS and further investment in telecommunications.

Circumstances surrounding the investment in the UFB network

30. The UFB investment is a once-in-a-generation infrastructure asset that was undertaken in a unique set of circumstances in 2011. It is well-established that any substantial investment in sunk infrastructure assets where there is uncertainty

associated with demand take-up, imposes significant risks on investors. There was no Government policy or support for uptake and no formal role for Government intervention if the programme encountered material difficulties. Chorus investors had no reassurance they would be compensated for the risks they took if the programme or the uptake had been unsuccessful, and debt repayments to Crown financing still had to be repaid.⁸

31. The significant risks faced by Chorus and our investors includes those associated with demand uncertainty, construction risk, the potential for substitution by other access technologies, the copper pricing implied billion-dollar funding gap and uncertain future regulatory and policy settings. These risks go well beyond those experienced in standard regulated infrastructure investments and are particularly acute in the pre-implementation period and continue into the post-implementation period.
32. We understand the challenge the Commission faces in developing IMs in the current context. However, while the Commission at times recognises the need for a new approach, demonstrated by the adoption of a DCF approach as opposed to the traditional BBM, more broadly we have material concerns about the method developed for valuing the FLA.

The Commission's methodology for estimating the FLA is a form of asymmetric regulation

33. The investment in the fibre access network was undertaken prior to investors knowing whether there would be an FLA or a BBM with any wash-up. The method now being used by the Commission to estimate the FLA exposes investors to risk, by introducing a form of asymmetric regulation. This is where regulation is imposed – and so returns are capped – only where projects are a success, but there is no recognition given to the real potential that things could have turned out very differently.
34. There are a range of aspects to the regime where it is unclear if the Commission has fully assessed the potential for adverse outcomes, which exposes Chorus to asymmetric risk. For example:
 - 34.1. The fact that we are in the midst of implementing price-quality regulation is a consequence of the project being a success and transitioning from a contract model to a utility model. As discussed earlier, if the project had not been successful, then Chorus would have borne the losses. There is no reason to believe the Government would intervene. In short, the fact ex-post that the asset did not become “stranded” during the period, does not mean that this risk did not exist.
 - 34.2. Similarly, the requirement for the RAB to include an explicit calculation of financial losses – and for this to be based on actual revenue and expenses – is the result of the project's success. During the pre-implementation period, Chorus incurred financial losses as a result of building ahead of demand. A supplier in Chorus' position in the pre-implementation period would expect to

⁸ For example, the lack of intervention by the Government when the 2013 draft copper pricing decisions resulted in Chorus facing significant financial challenges which threatened our ability to deliver on our UFB agreement. The UFB agreements also provided for 'step-in' rights for Crown Fibre Holdings (later CIP) rather than the ability to renegotiate contracts in the event that Chorus was unable to deliver to material obligations under the funding contract.

recoup these losses in subsequent years, assuming the project is successful and demand increases. If the project did not succeed, investors would bear the loss. The FLA therefore provides investors the opportunity to receive the expected benefit of their investment, reflecting the project risk. Conversely, discounting the FLA effectively transfers this “success benefit” from investors to consumers, who did not bear the project risk. This success has been driven in part by the strong market incentives and the orientation of Chorus as a wholesaler following demerger in 2011. If the rate of connections had been much slower than expected, there is no reason to believe the loss calculation would have been applied to compensate for past returns being less than expectations – it is likely this poor performance would have been borne by investors.

- 34.3. In addition, the Commission’s method for deriving the cost of capital has been conditioned by the fact that interest rates have fallen over the pre-implementation period. It is difficult to see this approach applied by the Commission had interest rates instead risen over this period.
35. The analogy of the framework the Commission has adopted for estimating the FLA in the context of Part 4, would be that the Commission has:
 - 35.1. Subjected the Part 4 regulated utility to price cap regulation based on an estimated cost of capital;
 - 35.2. Decided ex-post returns have been too high and as a result looked to claw-back the excess returns; and
 - 35.3. Then decided the application of claw-back has the effect of reducing the risk of the entity, and so retrospectively reduced the cost of capital, increasing the claw-back.
 36. The unique nature of a multi-billion dollar build ahead of demand under a public private partnership, a demerger, the uncertainty of the regulatory environment for both copper and fibre and the absence of any regulatory precedent for valuing the FLA, means the stated economic principles take on greater significance. The Commission must ensure that there is:
 - 36.1. **Real FCM** – An efficient provider should expect to earn a normal risk-adjusted return on an investment.
 - 36.2. **Efficient risk allocation** – The party best placed to manage the risk should bear the risk and be compensated for that.
 - 36.3. **A recognition of the asymmetric consequences of over- and under-investment** – An expected NPV = 0 outcome crucially depends on how the cost of capital is estimated.
 37. The principles applied correctly, promote the long-term benefit of end-users by properly allocating risks between Chorus, RSPs and consumers, and compensating investors for the risks incurred. To have efficient risk allocation in the context of the FLA, which involves a backward-looking assessment, requires the Commission to recognise that risk allocation actually exists. This is not currently the case.

38. The Commission's current approach is inconsistent with its economic principles, as the risks taken on by investors in 2011 are not properly compensated, nor is there recognition of our effective management of risks and the incentives for us to deliver services efficiently to consumers. Further assessment of the inadequate way risk has been dealt by the Commission is highlighted in the discussion of the cost of capital in Section 4.

Fibre IMs and the need for dynamic efficiency

39. Yarrow in developing the 2010 IMs for Part 4 highlighted the greatest benefits of competitive markets are that they deliver dynamic efficiency.⁹ He stated that:

In my view the greatest benefits of competitive markets are in terms of dynamic efficiency – the discovery and use of new information that leads to the development of new products and services, and to new, more efficient techniques of production.

40. We consider dynamic efficiency is particularly important in telecommunications markets, where there is ongoing technology progress and innovation resulting in the delivery of improved services to customers. During the pre-implementation period, even in the absence of formal regulation, this occurred due to the strong alignment between the commercial incentives and socially optimal outcomes to consumers. For example, the success of the UFB initiative has depended on migration from legacy copper services, which has driven Chorus to be innovative and customer oriented.
41. The fibre IMs need to continue to provide for dynamic efficiency by ensuring the settings provide the right incentives for us to further drive connections and improve product and services we offer to customers. Outcomes that are of benefit to consumers should also result in higher ARPU to Chorus. An approach which focuses too narrowly on reducing prices to consumers, while ignoring incentives to invest and innovate, will not benefit consumers.
42. In contrast to the technologically mature sectors regulated under Part 4, telecommunications services are constantly evolving with much stronger market dynamics. The need to focus on dynamic efficiency is therefore more compelling in the context of Part 6 than it is in Part 4. Moreover, our fibre network is only at 60% of capacity, and our ability to raise prices across a substantial portion of end-users is limited by features unique to Part 6, like the anchor product, but also in our ongoing design and innovation given key market dynamics of our industry, such as competition from 5G fixed wireless access services.
43. Typically for regulated industries the MAR is a constraint that exists to ensure that providers do not charge excessive prices for utility services. This is considered essential in promoting competition and efficiency in downstream retail markets. If the MAR of this regime is set too low here however, unlike other sectors where the constraint is applied, the regulatory framework will actually limit our incentives to migrate customers on to fibre and/or the incentives intended to continue to innovate and move them up the value chain. It is difficult to see how this outcome can be

⁹ George Yarrow, Martin Cave, Michael Pollit and John Small *Review of Submissions on Asset Valuation in Workably Competitive Markets: A Report to the New Zealand Commerce Commission*, (November 2010) Annex 2: George Yarrow – Response to Submissions on Individual Expert Reviews, at [2.18]. The quote is repeated in Commerce Commission, (November 2018), *New Regulatory Fibre Framework* at [6.6].

reconciled with the long-term benefits of end-users or the Government's overall objectives of improving connectivity and closing the digital divide.¹⁰

44. UFB is one of the most successful large-scale public-private partnerships ever undertaken in New Zealand and has been cited as an example worldwide of how to successfully deliver large infrastructure projects and fibre infrastructure investments. The Commission's approach to the estimation of the FLA will have lasting implications for Chorus and considerable care should be taken not to disrupt something that is working well and delivering for consumers.
45. The major outcomes of this process will show up in the phase two PQD process next year when a starting RAB and MAR are determined – the culmination of numerous judgments within and across the IM process and PQD phases. It is essential to ensure throughout each step of the process and every judgment that decision makers have a line of sight to the outcomes that will drive outcomes for real world investor and consumer activity.

3. APPROACH TO DETERMINING FINANCIAL LOSSES

46. The Commission's approach to the initial value of the FLA will not adequately compensate Chorus for losses it incurred during the pre-implementation period, and the combination of the decisions made means there is no expectation of real FCM or efficient allocation of risks in the pre-implementation period.

The change in methodology from BBM to DCF

47. The Commission is proposing to change its approach to calculating the FLA, from one of compounding losses under the BBM, to one of compounding net cash flows (the DCF method). The Commission explains that it has chosen to use the DCF method because, among other things, (1) it is the simplest to understand and interpret and should be familiar to all investment analysts, and (2) it is the standard approach adopted in finance theory and practice and avoids the cumbersome use of multiple BBM calculations.¹¹
48. We agree with the Commission adopting the DCF method, provided a constant cost of capital is used for discounting cash flows over the course of the pre-implementation period. As explained by Sapere, the BBM and DCF approaches will yield the same estimates of the FLA, if a constant cost of capital is used.¹² Also, investment analysts will be familiar with the DCF methodology using a constant cost of capital, rather than a different cost of capital for each year's cash flow.

Annual updating of the loss – updating vs a constant cost of capital

49. To estimate the value of the FLA, the Commission is proposing to annually update the cost of capital in its DCF calculation. We disagree with this approach. This represents a retrospective treatment of the opportunity cost of capital and means it will apply

¹⁰ "Over 90,000 more households and businesses now have UFB coverage", Minister Faafoi, 27 August 2019, <https://www.beehive.govt.nz/release/over-90000-more-households-and-businesses-now-have-ufb-coverage>

¹¹ Commerce Commission, (13 August 2020), *Further consultation draft (initial value of financial loss asset) - reasons paper*, at [3.8].

¹² Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [6].

twelve different values of the cost of capital over the course of the pre-implementation period.

50. A constant cost of capital is more consistent with the statutory purpose statement and the Commission's past practice. That is, the appropriate cost of capital for all expenditure incurred in the pre-implementation period is that which applied in 2011. This is because Chorus made the decision to participate in the UFB initiative in 2011 and therefore, the 'investment' was made at that date, rather than annually. A constant cost of capital determined in 2011 therefore reflects the legitimate expectations of investors in 2011 and compensates for the risk accepted by Chorus at the time the investment decision was made. It is also consistent with standard practice adopted in DCF valuations.
51. As Sapere explains, the Commission's proposed approach instead treats each year of investment as a separate investment decision. Implicit in that approach is that investors were in a position to re-assess the business case for proceeding with the UFB build at the outset of each year between 2011 and 2022. This does not reflect the commercial reality. Chorus' decision to participate (or not) in the UFB initiative was a single decision made in 2011. That decision then committed Chorus as a proactive wholesaler and to an ongoing programme of investment in fibre and other obligations until 31 December 2019, a commitment which was then extended by legislation to 31 December 2021.¹³ Each subsequent increment of expenditure was an unavoidable consequence of that 2011 decision.
52. The appropriate approach to determining the cost of capital in the pre-implementation period, as detailed by Sapere in its report, is to consider the expectations of investors at the time they made the decision to invest in the UFB initiative.¹⁴ The legitimate expectation of investors in 2011 would have been that they could earn at least the opportunity cost of all their assets, including their physical and financial assets. The expected opportunity cost of the investment is the cost of capital for the period to 31 December 2019, estimated immediately prior to the UFB tender, that is, at 1 May 2011.¹⁵
53. The Commission's argument against the use of a constant cost of capital appears to be influenced by the fact that none of the regulated providers that were parties to the UFB contracts with the Crown locked in finance rates in 2011 for the length of their contract.¹⁶ However, as Sapere notes, this is not relevant to parties' legitimate expectations of earning a normal return at the time they made the decision to invest for the length of their contract. Financing decisions take into account refinancing risk, investment decisions do not.¹⁷

¹³ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [13].

¹⁴ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [13-14].

¹⁵ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [21].

¹⁶ Commerce Commission, 13 August 2020, *Further consultation draft (initial value of financial loss asset) – reasons paper*, at [3.30].

¹⁷ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [24].

54. The Commission also implies that a constant cost of capital is only used for simplicity and is not a reflection of real-world decision making.¹⁸ As explained by Sapere, it is common commercial practice to use a constant discount rate for all project cashflows when assessing an investment, irrespective of the actual rate that may later prevail.¹⁹ The Commission noted that a key reason for changing to use the DCF methodology is because analysts will understand this calculation, however this is undermined by the use of a different cost of capital for each year's cash flow.
55. We note the Commission has misinterpreted the quote from Brealey, Myers and Marcus. The Commission uses the quote to infer that a constant cost of capital is only used for simplicity and is not a reflection of real-world decision-making. However, as Sapere notes, the quote continues to the conclusion that "with only rare exceptions firms decide on an appropriate discount rate and then use it to discount all project cashflows."²⁰
56. In addition, the Commission's proposal to apply an annual cost of capital rather than a constant cost of capital raises the question of a counterfactual scenario where interest rates rose over that period rather than fell. Investors have raised concerns that the Commission's proposal could be viewed as opportunistic in light of falling interest rates and that this undermines confidence in the Commission's approach to setting the cost of capital. As noted in Section 2 on the Regulatory Framework, this would amount to an asymmetric approach to regulation.

4. COST OF CAPITAL ESTIMATION

57. As noted in Section 3 on the valuation methodology for a FLA, a single cost of capital should be estimated from 2011. This is consistent with the approach taken by investors and should be done instead of the constant updating proposed by the Commission. Irrespective of whether one or multiple values are used, we remain concerned about the parameter values the Commission is adopting to undertake its estimates.
58. To estimate the cost of capital in the pre-implementation period, key issues and parameter values the Commission must consider include:
 - 58.1. The risk-free rate and its term;
 - 58.2. How it accounts for risks;
 - 58.2.1. The debt risk premium, which along with the risk-free rate and debt issuance costs are used to estimate the cost of debt;
 - 58.2.2. The equity risk premium, comprised of the equity beta (based on the asset beta and the level of leverage) and the TAMRP, which when combined with the risk-free rate is used to estimate the cost of equity;

¹⁸ Commerce Commission, 13 August 2020, *Further consultation draft (initial value of financial loss asset) reasons paper*, at [3.31].

¹⁹ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [26].

²⁰ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [25].

- 58.2.3. Any mark up on the cost of capital to compensate for stranding or Type II asymmetric risks;
- 58.3. Adjustments to percentile estimates reflecting the risks of estimation errors and asymmetries associated with risks of over- and under-investment.
59. As with the approach to valuation we are concerned that in its consideration of each of these issues, the Commission is taking a retrospective view on the opportunity cost of capital and not taking into account risks actually faced by investors in 2011. The parameter values chosen by the Commission reflect it treating risk over the pre-implementation period as having disappeared due to the decision now made to calculate the FLA. The proposed cost of capital estimates are too low. They do not properly compensate for the risk taken on by investors in 2011 and are such that no investor would have taken on the real risks if this had been known in 2011.
60. In particular our positions on key issues and parameters are that:
- 60.1. **Term of the risk-free rate** – Rather than a term of 5 years the Commission should use a term consistent with the decision to invest under the UFB initiative – i.e. either 8.7 years based on the alignment with the price-setting period for UFB1 programme, or 10 years based on long-lived assets constructed under the UFB.
- 60.2. **Asset Beta** – This should be higher than the asset beta post-implementation to reflect the investor risks that existed in 2011. Our experts have previously suggested 0.65 based on the evidence available, rather than the 0.49 proposed by the Commission.²¹
- 60.3. **TAMRP** – The TAMRP for the pre-implementation regulatory period should be set at 7.0%, which was the rate prevailing in 2011. If the Commission determines to estimate the cost of capital annually, then the question of timing of the change in TAMRP arises. As our experts advised, it is unlikely that any event has moved the TAMRP from 7.0% to 7.5% immediately, which means it would be appropriate to adopt an estimate of 7.25% for the TAMRP from 2017 to 2019.²²
- 60.4. **Debt premium** - Based on our independent experts' advice, the appropriate credit rating for the debt risk premium in the pre-implementation period is BBB, based on a 7-year term rather than the BBB+ rating used by the Commission. Further, we don't support the approach of adopting a single debt risk premium based on the median loss year. The Commission should instead use a debt risk premium relevant to the cost of capital estimation date.
- 60.5. **Asymmetric risks** – The asymmetric returns created by stranding risks and truncation that exists for new large infrastructure investment that are subject to demand uncertainty and the potential for future regulation, should be recognised by an *ex-ante* allowance. Our independent economic experts recommend that in relation to stranding there should be an *ex-ante* allowance of 59bps.

²¹ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [74].

²² Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [92].

60.6. **Percentile uplift** – A 75th percentile estimate should be used, rather than the mid-point estimate to reflect the reasonable expectations investors would have held in May 2011 of a normal return over time. Further, cross-checks show that the current estimate of the cost of debt is below Chorus’ actual observable cost of debt over the pre-implementation period, even when using a 10-year term for the risk-free rate. This is critical given that this is not a forward-looking decision and a risk of under-estimation is not something that Chorus can seek to mitigate in any way.

61. Each of the above issues is discussed in further detail in the sections that follow.

Term of the risk-free rate

62. The Commission is proposing to use a risk-free rate term of 5 years. We disagree with this proposed approach. As Sapere explains, the term of the rate should match the expected term of the pre-implementation period, that is, to 31 December 2019. This means a term of 8.7 years is appropriate. The overall cost of capital with a risk-free rate for this term should also apply throughout the pre-implementation period, as the price caps applied without variation (except for inflation adjustment) by legislation.

63. If the Commission insists on adopting the annual updating of the opportunity cost of capital, which we have noted earlier is inconsistent with the standard practice in DCF valuation, then the term of the risk-free rate should still reflect the common commercial practice of using long-term rates. We suggest a risk-free rate term of 10 years is appropriate to reflect the expectation of investors in long-lived infrastructure.

64. We note that the 10-year term of the risk-free rate is recommended by the Body of European Regulators for Electronic Communications:²³

The established practice by most NRAs to date has been to calculate the risk-free rate by using yields on 10-year domestic government bonds.

BEREC uses yields on domestic 10-year government bonds for each Member State to calculate the risk-free rate. The approach of using long-term bonds, which are less volatile than shorter-term bonds, is in line with the longer-term nature of investments in electronic communications networks.

65. We also note that using a 10-year term for the risk-free rate to estimate the cost of capital is also common amongst many Australian regulators.²⁴ We recognise the Commission in regulating infrastructure does not use such an approach, as it matches the term of the risk-free rate to the term of price regulation. Nevertheless, the rationale provided by Australian regulators for using a longer term for the risk-free rate is instructive for the pre-implementation period, which is being treated by the Commission as a commercial period. Australian regulators using the 10-year term have justified this approach on the basis that it is consistent with the long-term nature of infrastructure investments being considered. We maintain that this justification also

²³ BEREC Report on WACC parameter calculations according to the European Commission’s WACC Notice – available at https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/9364-berec-report-on-wacc-parameter-calculations-according-to-the-european-commission8217s-wacc-notice.

²⁴ For example, the ACCC, AER and IPART (New South Wales) all use 10-year terms for the risk-free rate.

applies to how the risk-free rate should be estimated for the fibre access network in the pre-implementation period.

66. The Commission's proposal to use a risk-free rate term of 5 years is valid if it is regulating prices for 5 years, and such term matching as noted above is the Commission's standard approach to price regulation. However, the circumstances here are different. The pre-implementation period does not reflect a standalone regulatory pricing period and the Commission is treating it as a commercial period. On that basis, there is no rationale for a 5-year term.
67. The term of the risk-free rate that the Commission adopts for the pre-implementation period should be based on the expectations of investors assessing whether to make a commercial investment in a fibre access network. Investors would have considered the expected return from an investment relative to the opportunity cost of capital. The opportunity cost would reflect the characteristics of the investment, including the term of the investment, which for such a long-lived infrastructure asset like fibre would likely be 10 years rather than 5 years. For this reason, a 10-year term for the risk-free rate is more appropriate.
68. Sapere notes that it is normal in corporate financing to separate the "investment decision" outlined above from the "financing decision". The financing decision is made separately and depends on different factors, including the entity's appetite to accept refinancing risk.²⁵
69. As Sapere notes, if the Commission maintains the view that the financing decision is relevant, the balance of evidence presented by the Commission does not suggest that the decision to adopt annual financing with a term of 5 years is appropriate.
70. If the Commission were to take into account the financing decisions, this suggests that it should consider only updating the cost of capital when refinancing might actually occur. This is as opposed to the annual updating. If it were to do that it should also use a longer term than 5 years, as Sapere notes the debt financing for Chorus is in the range of 7-10 years.

Accounting for risk

71. As outlined in the earlier section on the Regulatory Framework, investors faced significant risks in 2011, many of which remain today. These risks included:
 - 71.1. No initial demand and uncertainty over future demand;
 - 71.2. Cost uncertainty;
 - 71.3. No guarantee of any bail out on the investment by Government;
 - 71.4. Potential substitution from emerging mobile broadband services or future dark fibre services; and
 - 71.5. Policy and regulatory risk.

²⁵ Sapere, (8 September 2020), *Cost of capital input methodologies – further consultation initial value of financial losses*, at [30].

72. These risks must be properly considered by the Commission in undertaking any cost of capital estimate, in particular in estimating the cost of debt and equity. In addition to our concerns about the term of risk-free rate outlined above, the debt risk premium is inappropriately calculated and there is also no recognition of the additional systematic risks and the asymmetric risks that exist in the pre-implementation period.

Debt risk premium

73. The Commission has proposed to base its debt risk premium on a BBB+ credit rating. We don't agree with this approach. For the pre-implementation period the debt risk premium should be based on a BBB credit rating and estimated using the prevailing rate for seven-year corporate bonds as at 1 May 2011. A BBB credit rating is consistent with Chorus' actual credit rating.
74. As noted by Sapere the use of BBB+ by the Commission fails to recognise that in the pre-implementation period the choice of credit rating is about assessing whether Chorus behaved prudently and efficiently given expectations in 2011. It is not about setting future prices. We had strong incentives to minimise costs and behave prudently and efficiently in the pre-implementation period, so it is appropriate to use Chorus' actual credit rating of BBB. This also exceeds the contractual requirement of achieving a minimum BBB- rating.²⁶
75. Further, the Commission is proposing to adopt a single debt risk premium based on the median loss year. We don't support this approach. As noted by Sapere, the Commission's approach to estimation of the FLA doesn't involve estimation of year-by-year losses and therefore doesn't result in the identification of the median loss year. The discounted cash flow approach that the Commission has now proposed to use will simply indicate a net cash flow position for each year of the pre-implementation period.²⁷
76. Even if it was accepted that the median net cash flow position is the best approximation for the median loss year in the pre-implementation period, Sapere advises there is no basis to believe the median loss year would coincide with a central value for the debt risk premium.²⁸
77. Sapere has estimated a plausible range around the actual value of the FLA based on the Commission's assumptions in its example spreadsheet and prior determinations of the debt risk premium for EDBs and GPBs. Sapere's analysis illustrates that, even if it were possible to adopt a single value, this would potentially create a non-trivial wealth transfer.²⁹ On this basis, Sapere concludes that the Commission should use the debt risk premium relevant to the cost of capital estimation date.

²⁶ Sapere, (August 2020), *Cost of capital for fibre input methodologies – response to Dr Lally*, p 2, at [7].

²⁷ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [34].

²⁸ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [35].

²⁹ Sapere (8 September 2020) *Cost of capital input methodologies – further consultation initial value of financial losses*, at [35].

Asset Beta

78. We don't support the Commission's draft decision to apply the same asset beta in both pre-implementation and post-implementation periods. The asset beta for the pre-implementation period should be higher than for the post-implementation period to reflect the greater systematic risks in the pre-implementation period. As explained by Oxera, the greater systematic risk, and therefore a higher asset beta, arises due to the effect of operating leverage, demand risk and long-term cash flows being more pronounced in the construction and early growth phase than in the steady state of the investment in FFLAS.³⁰
79. We note the Commission's own expert, CEPA, acknowledges the impact of operating leverage on asset beta "in the roll-out phase and while demand (and therefore connections) is growing".³¹ Although CEPA declines to comment on submitter views in relation to the appropriate asset beta for pre-implementation of the new regulatory framework,³² we assume it would not disagree with our submission that the asset beta in the pre-implementation period (i.e. construction phase of the UFB initiative) should be deemed to be higher than in the post-implementation period (i.e. post-construction phase of the UFB initiative).
80. The Commission's draft decision to apply the same asset beta to both pre- and post-implementation periods appears to be based on a view that it is simply too difficult to quantify an adjustment. This is not an adequate basis for rejecting some form of adjustment if it believes that conceptually there will be differences in the risk profile and the systematic risks are higher. Further, as outlined in Sapere's report, there are a number of asset beta estimates, including those provided by Crown Fibre Holdings (subsequently referred to as CIP), NBN Co, and Openreach that provide guidance and a basis on which to make that judgement.³³
81. After considering a range of appropriate estimates, and in recognising the higher systematic risk in the pre-implementation period relative to the post-implementation period, Sapere has concluded an asset beta of 0.65 should be adopted for the pre-implementation period as opposed to the 0.49 value used by the Commission.
82. We also note that to calculate the equity beta, the Commission should use a leverage of 40% with the asset beta of 0.65.³⁴

TAMRP

83. Consistent with investor expectations in May 2011, the TAMRP for the pre-implementation regulatory period should be set at 7.0%, which was the rate prevailing in 2011.

³⁰ Chorus, (16 July 2019), *Fibre emerging views submission*, at [41] - [43]; Oxera, (15 July 2019), *Compensating for systematic risks*, Table 2.1.

³¹ CEPA (17 October 2019), *Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage, and credit rating – Response to submissions*, p 25.

³² CEPA (17 October 2019), *Cost of capital for regulated fibre telecommunication services in New Zealand: Asset beta, leverage, and credit rating – Response to submissions*, footnote 64, p 29.

³³ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [72].

³⁴ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [78].

84. If the Commission insists on an annual update of the cost of capital, then we support the adjustment to the TAMRP proposed by the Commission to use an estimate of 7.5% in 2019. However, without any exceptional economic events since 2015 it is unlikely that the TAMRP sharply moved from 7.0% to 7.5% immediately prior to the re-estimation in 2019. To reflect that any movement is likely to be more gradual, and as with the Commission's approach to the timing of cash flows, Sapere explains it would be appropriate to adopt an estimate of 7.25% for the TAMRP from 2017, and 7.5% should apply from 2019 when the TAMRP was re-estimated by Dr Lally.³⁵

Type II asymmetric risk

85. We disagree with the Commission's draft decision not to apply an *ex-ante* allowance for Type II asymmetric risk in the pre-implementation period. An allowance should be applied for both the pre- and post-implementation periods, because Type II asymmetric risks apply in both circumstances.
86. The Commission has set out a framework for estimating the *ex-ante* allowance, using the Dixit & Pindyck model and have proposed an allowance for the post-implementation period of 10bps. Our independent experts have applied the Commission's framework to Chorus' circumstances and their analysis results in an illustrative allowance of 59bps (with a more precise result able to be calculated once the RAB is determined).³⁶
87. It is well established that for large scale sunk infrastructure investments in new networks where there is demand uncertainty, there is potential for stranding and for regulation to create asymmetric risks that truncate returns.³⁷ The additional risks placed on investors and the appropriate policy and regulatory response has been discussed in great detail over the past 20 years in Australia in successive Productivity Commission reports dealing with new investments infrastructure, in particular in gas pipelines.³⁸ The Commission though does not currently recognise these well-established risks in the pre-implementation period.
88. For Chorus, given there was initially no demand for fibre and there was considerable uncertainty around take up and the potential for competition from competing access technologies, there were significant risks of stranding. This risk did not materialise due to the effective management of risks by Chorus, which has managed to achieve higher than forecast levels of take-up. The success of the project has now led to the introduction of regulation which will cap the returns. The Commission however has provided no recognition for the real potential that things could have turned out very differently pre-implementation. As already noted in Section 2 on the Regulatory Framework, just because asset stranding was avoided, does not mean that a material

³⁵ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [92].

³⁶ Chorus, (28 January 2020), *Submission on Fibre input methodologies: Draft decision reasons paper dated 19 November 2019*, at [248-276]; NERA (22 January 2020), *Assessment of Type II asymmetric risk for Chorus' network*, section 4.3.

³⁷ See K. Funston, *Real Options and Telecommunications Regulation, The Economics of Online Markets and ICT Networks*, pp 113-127, 2006; J.S. Gans, and S. King, *Access Holidays for Network Infrastructure Investment*, Agenda 10, pp 163-78, 2003; and J.S Gans, and S. King, *Access Holidays and The Timing of Infrastructure Investment*, *The Economic Record* 80, pp 89-100.

³⁸ For examples of the extensive recognition and discussion on the potential for asymmetric truncation see Productivity Commission, *Review of the National Access Regime*, 2001; Productivity Commission, *Telecommunications Competition Regulation*, 2001; Productivity Commission, *Review of the Gas Access Regime*, 2004; and Productivity Commission, *National Access Regime*, 2013.

risk did not exist. As Sapere also explains, if there is a risk of stranding then that is a cost, for which the provider should be compensated, *even if that risk does not materialise*.³⁹

89. Asymmetric risks will exist in both the pre- and post-implementation periods. Oxera recognises that each tranche of UFB investment programme will have its own risk characteristics, which implies the Type II asymmetric risks differ between the pre-implementation period and the post-implementation period:⁴⁰

In relation to question 4 [What is the magnitude of any type 2 asymmetric risks that you identify above? Is the magnitude of these risks likely to be different between the pre-implementation period and the post-implementation period?], this report provides initial estimates of the uplift above WACC needed to honour the fair bet principle for the UFB1 programme tranche of investment. Our initial estimates suggest that a range of []. We note, however, that these are indicative estimates and further work would be needed to estimate the appropriate uplift for UFB1 and subsequent tranches. This quantification is explained in further detail in section 4. Finally, in relation to whether the magnitude of these risks is likely to be different between the pre-implementation period and the post-implementation period, we explain in this report that when the project involves multiple tranches of investment, each with their own risk characteristics, the fair bet exercise needs to be conducted for each tranche individually. In other words, this would involve estimating a different cost of capital for each tranche, assessing the risks of these investments as they existed at the time at which the investments took place, and deriving a separate 'delta' uplift for each.

90. We consider that pre-implementation period Type II asymmetric risks are likely to be higher than the post-implementation risks that Commission has *ex-ante* proposed to compensate for in the IMs. This is due to the demand uncertainty being much greater pre-implementation than post-implementation – there was no demand in 2011 for fibre services while there is 60% take up today.

A 75th percentile v mid-point estimate

91. We disagree with the Commission's draft decision not to apply an uplift to its mid-point estimate of the opportunity cost of capital in the pre-implementation period. As Sapere explains, an uplift to the 75th percentile should be applied for the pre-implementation period, to reflect the reasonable expectations investors would have held in May 2011 of a normal return over time.⁴¹ This retrospective treatment best preserves investor confidence in the regime, consistent with the purpose in section 162(a).

92. As Sapere explains:

92.1. An uplift is consistent with the Government's economic policy at the time. The UFB initiative was expressly intended to accelerate investment and the 2011 GPS focused on mitigating concern about the potential costs to consumers of

³⁹ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [79-82].

⁴⁰ Oxera, (15 July 2019), *Compensation for asymmetric type 2 risks - Applying the fair bet principle in the new regulatory framework for fibre in New Zealand*, at [5.6].

⁴¹ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [11].

under-investment and lack of innovation. At the time, the Government's concern was to assure investors they would achieve a normal return given the risk to which they were exposed in 2011, in rolling out a new technology; and

- 92.2. An uplift is consistent with the Commission's regulatory practice at the time, where the Commission applied the 75th percentile to energy and airport companies, and therefore investors would reasonably have formed the expectation that this would also apply to FFLAS.⁴²
93. If the Commission is unwilling to accept that the decision made by Chorus and LFCs to invest under the UFB initiative was made in May 2011, then the appropriate point estimate for the opportunity cost of capital needs to reflect the investor expectations that changed over time. Over the course of the pre-implementation period, investors would have had to accept from late 2014 the Commission's decision amending the cost of capital percentile for Part 4. This means a retrospective treatment of the opportunity cost of capital estimated annually, would require applying the 75th percentile from 2011 to 2014, and then the 67th percentile from the date of the Commission's amendment decision until the implementation date.⁴³
94. We also consider there is merit in using the 75th percentile based on the cross-checks we have done of the cost of debt estimate with Chorus' actual cost of debt. This issue is described further in the section that follows.

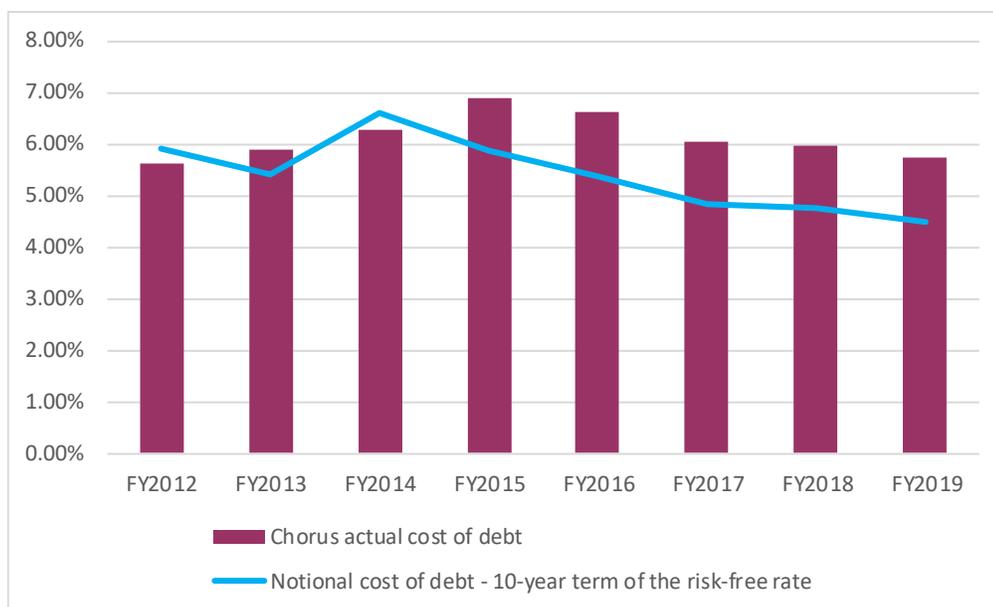
Checking reasonableness on the cost of capital estimate

95. We note the Commission's view that *"use of common commercial practice is appropriate in the purpose and context of [retail fuel] market study, which unlike [the] present task, did not involve determining large wealth transfers"*. The Commission's point about wealth transfers is unclear. Chorus' understanding of the retail fuel market study's purpose was to determine whether there was evidence to suggest that New Zealand consumers are overpaying for fuel. Given the \$10 billion spent by consumers annually this suggests potential for significant wealth transfers.⁴⁴
96. We do not agree that there is a wealth transfer from a decision to apply a 10-year term of the risk-free rate, as commonly adopted practice. If anything, were the Commission to perform a cross-check by comparing its notional cost of debt with Chorus' actual cost of debt over the pre-implementation period, it would appear to suggest the opposite. In addition to using such a cross-check to assess the appropriateness of a 10-year term, as noted above, this can be used to inform whether a 75th percentile estimate is more appropriate than a mid-point estimate.
97. The graph below shows the difference between Chorus' actual cost of debt and the notional cost of debt estimates based on the Commission's approach of annually updating the estimate and using a 10-year term of the risk-free rate. It demonstrates that even when adopting a 10-year term for the risk-free rate, for most years, except for FY2012 and FY2014, the notional cost of debt estimates will under-compensate Chorus for its actual borrowing costs incurred during the pre-implementation period.

⁴² Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [32] - [39] and [92] - [94].

⁴³ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [93].

⁴⁴ Commerce Commission (5 December 2019), *Market Study into the retail fuel sector final report*, p 8.



98. While the cost of equity is not directly observable, we consider under-compensation risks also exist in relation to the expected return equity investors expected during the pre-implementation period.
99. This is evidenced in Dr Lally’s expert report on the estimation of TAMRP,⁴⁵ which demonstrates that the average TAMRP observed in New Zealand markets since 2011 was significantly higher than 7.5% (as proposed by the Commission to apply from November 2020):
- 99.1. TAMRP of 10.7% based on Ibbotson method and 10-year term of the risk-free rate for the period 2011-2018;⁴⁶
 - 99.2. TAMRP of 9.9% based on Siegel 1 method and 10-year term of the risk-free rate for the period 2011-2018.⁴⁷
100. Such outcomes, where the estimated cost of debt under-compensates Chorus for the actual/observed cost of debt, will not best preserve investors’ confidence in the regime, and will therefore be inconsistent with the purpose in section 162(a).

Cost of capital parameters

101. The table below summarises our key positions on the cost of capital estimate and compensation for Type II asymmetric risks.

⁴⁵ Dr Lally, (26 September 2019), *Estimation of TAMRP*.

⁴⁶ Dr Lally, (26 September 2019), *Estimation of TAMRP*, Table 1, p 5. TAMRP will be higher than 10.7% if an adjustment is made to align with a 5-year term of the risk-free rate.

⁴⁷ Dr Lally, (26 September 2019), *Estimation of TAMRP*, Table 2, p 11. TAMRP will be higher than 9.9% if an adjustment is made to align with a 5-year term of the risk-free rate.

Parameter	Commission	Chorus position
Asset beta	0.49 ⁴⁸	0.65 Based on the review of a wide range of available evidence, our independent experts ⁴⁹ , have estimated a pre-implementation asset beta of 0.65.
Debt premium	BBB+	BBB Based on our independent experts' advice ⁵⁰ , the appropriate credit rating for the debt risk premium in the pre-implementation period is BBB.
Term of risk-free rate	5-years, annual updating	8.7 years from 2011, 10 years if annual updating is used.
Leverage	31%	40% Our independent economic expert ⁵¹ advised it is reasonable to use a leverage of 40% for the pre-implementation period with the proposed asset beta of 0.65.
Percentile uplift	50 th percentile	75 th percentile Our independent economic expert ⁵² advised an uplift to the 75 th percentile is given to reduce the risk of underestimation of the cost of capital to 25% and to align with reasonable expectations as at May 2011 of there being such an uplift. We also consider that based on cross-checks comparing estimates of the notional cost of debt versus Chorus' actual cost of debt, using a 75 th percentile will reduce the risk of regulatory error in estimation.
TAMRP	7.0%, FY 2012-2020 7.0%-7.5% (weighted average), FY 2021 7.5%, FY 2022 TAMRP uses a weighted average for the loss year in	7.0%, FY 2012-2017 7.25%, FY 2018-19 7.5%, FY 2020-2022 Our independent economic expert advised that the TAMRP for the pre-implementation regulatory period should be set at 7.0%, which was the rate prevailing in 2011.

⁴⁸ While there is no reference to asset beta in the IM rules as such, the Commission's specified 'equity beta' of 0.71 is based on an asset beta of 0.49 and leverage of 31%.

⁴⁹ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [74].

⁵⁰ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [56].

⁵¹ Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [78].

⁵² Sapere, (27 January 2020), *The cost of capital input methodologies for fibre*, at [85].

	which it transitions from 7.0% to 7.5%.	
Type II asymmetric risk	<p>No allowance for Type II asymmetric risk for the pre-implementation period.</p> <p>An allowance of 10bps has been made for the post-implementation period.</p>	<p>0.0059</p> <p>The stranding risks associated with demand uncertainty in the initial period is higher.</p> <p>Our independent economic expert⁵³ advised that an <i>ex-ante</i> allowance of 59bps for stranding risks is appropriate.</p>

⁵³ NERA, (22 January 2020), *Assessment of Type II asymmetric risk for Chorus' fibre network*, at [103].

5. TREATMENT OF CROWN FINANCING

102. We disagree with the Commission's revised view in the Reasons paper on the treatment of Crown financing. The Commission's revised view does not provide us with the opportunity to maintain our financial capital in real terms and therefore does not achieve the purposes of the Act. The Commission's revised view is also at odds with the advice it has received from its own expert advisor, Dr Lally, whose view is aligned with the view presented by our expert advisor, Incenta economics.⁵⁴ From a process perspective, it is very troubling that the Commission has reversed its views at a late stage, in the absence of new evidence, and on a point on which it has already received substantial amounts of submissions and evidence.
103. The Act requires that the Commission reflect the actual costs of Crown financing in the calculation of the value of the FLA. The Act does not give the Commission discretion in its approach to Crown financing; its role is simply to estimate the actual costs of Crown financing and reflect that in the FLA.
104. As outlined in our previous submissions, the Commission's revised proposal stands in stark contrast to the advice of experts that Crown financing is fundamentally debt-like in nature and so leaves Chorus exposed to a residual risk.⁵⁵ Having now seen the full package of Commission proposals for the pre- and post-implementation period, it is clear that this residual risk is not compensated for in the regime.
105. As we have stated in our previous submission,⁵⁶ we disagree with the Commission's latest reasoning on Crown financing because:
- 105.1. The question of the nature of financing Chorus would have obtained if it didn't receive Crown funding is irrelevant. If there was no Crown financing, the project would not have proceeded. Equity would not have been available because the project was not commercial. The Commission's argument on this point ignores the fact that the Crown financing was intended to bring forward investment that would not have otherwise happened.
- 105.2. The Commission has assumed that, because one of Chorus' options after the transition date for the Crown finance "equity" is to allow it to convert to a preference share that it is akin to a dividend free preference share, and so is equity. However, we disagree with this reasoning:
- 105.2.1. Allowing the conversion to a preference share is only one of Chorus' options for the equity component – Chorus can also repay the obligation in cash or with a grant of shares. Experts agree that a repayment in cash is the most likely. As Incenta argued,⁵⁷ the equity component is just free capital that ranks behind senior debt but ahead of equity in a wind-up.

⁵⁴ Dr Lally, (25 May 2020), *Further issues concerning the cost of capital for fibre input methodologies*, p 8.

⁵⁵ Chorus, (13 August 2020), *Chorus submission on "Fibre input methodologies - further consultation draft reasons paper"*, at [27].

⁵⁶ Chorus, (13 August 2020), *Chorus submission on "Fibre input methodologies - further consultation draft reasons paper"*, at [33].

⁵⁷ Incenta, (July 2019), *Chorus's actual financing cost for Crown-financed investment*, at [58].

105.2.2. A preference share is not ordinary equity. It is a hybrid between equity and debt that has a lower cost of capital than ordinary equity. Accordingly, the Commission is wrong to suggest that even if the Crown finance equity was equivalent to a dividend free preference share that such a characterisation would make this finance equivalent to ordinary equity.

105.3. The Commission has pointed to the treatment of ratings agencies as part of the Crown financing as equity in support of its proposal. However, how ratings agencies treat this finance does not determine its economic characteristics – the focus of the rating agencies is the protection afforded to debt providers, and so they use a definition of equity that is specifically tailored to this purpose. For example, Standard & Poor’s states the following in its Corporate Ratings Criteria⁵⁸ (emphasis added):

"What constitutes equity in the first place? Traditional common stock – the paradigm equity – sets the standard. But equity is not a monolith concept; rather it has several dimensions. Standard & Poor’s looks for the following positive characteristics in equity:

- *It requires no ongoing payments that could lead to default;*
- *It has no maturity or repayment requirement;*
- *It provides a cushion for creditors in the case of bankruptcy*
- *It is expected to remain as a permanent feature of the enterprise’s capital structure.*

If equity has these defining attributes, it should be apparent that a specific security can have a mixed impact. For example, hybrid securities, by their very nature, will be equity-like in some respects, and debt-like in others. If equity has Standard & Poor’s analyses the specific features of any financing to determine the extent of financial risks and benefits that apply to an issuer. In any event, the security’s perceived economic impact is relevant, its nomenclature is not. A transaction that is labelled debt for accounting, tax, or regulatory purposes may still be viewed as equity for ratings purposes, and vice versa". (Emphasis added)

106. In addition, we note that the Commission’s proposed treatment of Crown financing for Chorus is inconsistent with its proposals for the Local Fibre Companies (**LFCs**). For the LFCs, the Commission proposes that the treatment of Crown financing reflect its fundamental nature. Clause 1.1.10(5) states:

For the purposes of applying the ‘mid-year compounding factor’ in the calculation of the ‘present value benefit of Crown financing’ in clause 1.1.2(4) of Schedule B, in respect of a regulated provider other than Chorus that has Crown financing outstanding for the financial loss year that is, in substance:

(a) provided by way of debt, leverage means the ratio of debt capital to total capital and is 100%; and

⁵⁸ Standard and Poor’s, *Corporate Ratings Criteria*, p.91

(b) provided by way of equity, leverage means the ratio of debt capital to total capital and is 0%.

107. For Chorus, a vastly different treatment is proposed. The Commission proposes to deem the avoided cost to be an interest rate reflective of the full project risk (i.e. the cost of capital) even though the fundamental nature of the finance according to both Dr Lally and Incenta is of debt. The Commission's justification for applying a different treatment for Chorus is unclear.
108. If the Commission were to accept Crown financing as being debt like in nature, then views have been expressed in previous submissions by Chorus,⁵⁹ and Dr Lally as to how this should be done operationally. In particular:
 - 108.1. Both the term of the debt and the time that the interest rate is determined should be applied in a manner that is consistent with the assumptions applied for the regulatory debt. This means that the "avoided cost" can be expressed as the regulatory debt cost + a factor.
 - 108.2. In terms of the factor noted above, we agree that it should be two credit notches (i.e. from BBB+ to BBB-) reflecting (i) the difference between Chorus' actual credit rating and the benchmark, and then (ii) the predominately subordinated nature of the CIP.

The adjustment should reflect the forecast amount of Crown financing outstanding for that regulatory year.⁶⁰

109. For the sake of clarity, the forecast amount of outstanding Crown financing does not need to reflect the repayment schedule agreed between the regulated provider and the Crown. Rather, it needs to reflect the regulated provider's forecast of the outstanding obligations in relation to Crown financing. Any potential difference between the forecast and actual amount of Crown financing will then be reflected in the wash-up amount under price-quality regulation, as per the Commission's proposal.⁶¹
110. Correctly reflecting the actual costs of Crown financing is critical to ensure a reasonable opportunity for a return on capital, and compensating investors for the risks they have taken. As outlined earlier, having an opportunity to make a fair return is the key to ensuring end-users benefit from continued investment and innovation.
111. We encourage the Commission to consider the broader signal its proposed approach to Crown financing sends to investors. Chorus partnered with Government to build a world class fibre network. The Commission's apparent position is to go beyond removing any benefit from Chorus' deal with the Crown to imposing a cost. Had investors been aware of this before the network was built it is unlikely the project would have ever proceeded. This sends a strong negative signal both to existing

⁵⁹ Incenta (July 2019), *Chorus's actual financing cost for Crown-financed investment*, at [7 to 11]; and Incenta (August 2020), *Crown financing – issues raised in further paper by Dr. Lally*, at [1.2.2].

⁶⁰ Chorus, (13 August 2020), *Appendix A: Chorus proposed amendments to the further IM determination*.

⁶¹ Commerce Commission, (23 July 2020), *Fibre input methodologies – further consultation draft - reasons paper*, at [3.31].

investors and any prospective investors considering partnership with Government and/or investment in New Zealand.

6. TREATMENT OF PRE-2011 ASSETS

Inclusion of pre-2011 assets

112. We agree with the Commission maintaining its draft decision to include pre-2011 assets in the calculation of the FLA. The acquisition of pre-2011 assets by Chorus was itself undertaken as a condition of, and pursuant to, the UFB initiative. Therefore, investors have an expectation of a return on and of capital for pre-2011 assets.
113. It is reasonable to assume that FFLAS consumers should contribute to the recovery of their share of the existing assets that are re-used to provide FFLAS. That is, as the consumer transitions from copper to fibre they should continue to pay their share of the cost. This ensures the right outcome is achieved, which is consistent with a workably competitive market. As the Commission notes⁶², an incremental cost approach would not account for customer migrations from copper to FFLAS and lead to under-recovery of shared costs.
114. However, we disagree that the Commission has discretion under section 177 as to whether these assets are included or not. Rather, a plain reading of section 177 *requires* the Commission to include in its calculation of the value of the FLA any accumulated unrecovered returns on assets used to meet Chorus' UFB obligations.

TERA cross-check for copper and fibre cost recovery

115. We agree with the Commission's decision not to use TERA's proposed method to check for under- or over-recovery.⁶³ TERA's approach requires a BBM model for both copper and fibre and then removing UBA and UCLL revenue based on TSLRIC based prices. Analysys Mason's report⁶⁴ discusses this in detail. TERA's approach ultimately requires a significantly more complex model for very little benefit.

Cost allocation for pre-2011 assets

116. We agree that cost allocation is required for pre-2011 assets. However, we disagree that additional safeguards are required to prevent over-allocation to FFLAS because: (a) the Commission has overstated the risk of over-allocation to FFLAS; and (b) the existing safeguards are more than adequate.
117. The Commission supports accounting based allocation approach (**ABAA**) as it's suitable to produce results consistent with outcomes in workably competitive markets.⁶⁵ As a starting point the Commission should also apply ABAA to pre-2011

⁶² Commerce Commission, (13 August 2020), *Fibre input methodologies: Further consultation draft initial value of financial loss asset – reasons paper*, at [2.64].

⁶³ Commerce Commission, (13 August 2020), *Fibre input methodologies: Further consultation draft initial value of financial loss asset – reasons paper*, at [2.63].

⁶⁴ Analysys Mason, (24 January 2020), *Response to TERA paper on "over-recovery"*.

⁶⁵ Commerce Commission, (19 November 2019), *Fibre input methodologies: Draft decision – reasons paper*, at [3.388.1].

assets since that will be consistent with workably competitive markets and also the treatment of costs post-2011.

118. While we agree that the principles of allocation should be specified in the IMs, an overly prescriptive approach is unlikely to be beneficial. We intend to approach cost allocation of pre-2011 assets constructively and in a pragmatic way. Our expectation is that many of the theoretical concerns regarding over-allocation will not arise in practice.
119. In addition, context is required when considering cost allocation during the pre-implementation period since some costs that benefitted copper were only incurred because of FFLAS, for example:
 - 119.1. A pre-requisite for participating in the UFB initiative was structural separation. This required the creation of new, duplicated IT systems over the pre-implementation period (and this work is not quite complete). While these systems will be used by the whole of the business in the future, the driver was the UFB initiative, resulting in little benefit to copper services compared to the pre-existing systems; and
 - 119.2. Chorus embarked on major marketing campaigns designed to attract and retain consumers on fixed line broadband. This resulted initially in copper connections, but with a long-term focus and principal motivation to increase connections to fibre once available in an area. The rate of fibre uptake is reflected in the future revenue over several years used to calculate the allocation of such costs used within the calculation of the FLA.

Filters for cost allocation of pre-2011 assets

120. We agree with the Commission applying a filter for assets that support UFB services, rather than geographic footprint of the assets themselves, when calculating the FLA. However other filters applied to pre-2011 assets will be challenging to implement based on the information available. The limitations of the information available from our systems place pragmatic constraints on the nature of the cost allocations that can be applied and on the nature of any filtering supporting such cost allocations. The Commission needs to consider these limitations in setting the cost allocation IMs.
121. For example, there are two key sources of asset data:
 - 121.1. **Fixed Asset Register (FAR)** – The function of the FAR is to reflect the value of the assets deployed rather than why it was built or what services the assets are used to support; and
 - 121.2. **Network records** – We maintain physical network records in a GIS system. This contains information such as asset type and asset location (e.g. Chorus UFB area) but doesn't allow us to identify specific services supported by the asset.

Safeguards already in the IMs

122. While we support the Commission's intent of safeguards for windfall gains from cost allocation, there are sufficient measures already in the IMs that help ensure costs are justifiably allocated. These include:

- 122.1. Only allocating assets to FLA (and the RAB post-implementation) when they are employed to provide FFLAS (where *employed* is defined as “available for use”);
 - 122.2. Requiring proportionate cost allocation, using ABAA to allocate costs to FFLAS and non-FFLAS;
 - 122.3. Requiring the updating of cost allocation data annually;
 - 122.4. Listing default allocators in the IM rules for calculating FLA;
 - 122.5. Requiring that cost allocators are applied consistently across costs and between years; and
 - 122.6. The Commission has the final decision to determine the value of FLA, and the cost allocation decisions behind it.
123. The Commission has also raised specific questions which we address in Appendix 1.
124. The inclusion of additional measures proposed by the Commission, as discussed below, are unnecessary and inconsistent with its economic principles. The Commission notes that excluding pre-2011 assets may discourage asset sharing for future regulated infrastructure projects, counter to section 162(b). This logic can be extended to measures that seek to artificially lower the allocation of shared costs (for instance removing “over-allocated” assets) which also signal there is risk we would not have the opportunity to fully recover these costs.

Removing “over-allocated” assets

125. The proposal to exclude in their entirety any assets which are found to be “over-allocated” is inconsistent with section 177 of the Act, because it essentially amounts to a write-down of the applicable asset value. Section 177 prescribes the rule for valuing fibre assets, including pre-2011 fibre assets. An approach to cost allocation that either removes the asset from the RAB or allocates a greater proportion of its value out of the RAB than would be warranted by ordinary principles of cost allocation, undermines Parliament’s decision to prescribe the initial asset valuation methodology. In addition, that approach would undermine FCM and therefore would be inconsistent with the purposes of Part 6.
126. Furthermore, the Commission has not provided a clear indication of what would be considered “over-allocation” and therefore there is significant uncertainty over how this would be workably implemented.

No allocation until a threshold is met

127. The Commission also suggests only allowing the cost of assets to be allocated to FFLAS only when they are primarily used for FFLAS. For instance, below the 50% threshold, an asset would be 100% attributed to non-FFLAS services, however, above the threshold it would only be allocated based on the cost allocator values. This creates a disproportionate allocation in two ways:
- 127.1. Too little cost would be allocated to FFLAS in the early years; and

- 127.2. A small percentage change in utilisation could generate a large percentage change in the resulting allocation.
128. As with the proposal to exclude assets subsequently found to have been over-allocated, this approach effectively writes-down the value of the asset and therefore conflicts with the statutory direction in section 177.
129. Moreover, this proposal is inconsistent with the cost allocation principles the Commission has developed over many years in the Part 4 context. The Commission has repeatedly reaffirmed its view that ABAA replicates outcomes the Commission would expect in a workably competitive market. Applying a threshold for allocating shared assets to FFLAS deviates from ABAA and implies an over-allocation of shared assets to unregulated services, which is not consistent with outcomes in workably competitive markets. Furthermore, the asymmetric nature of the rule is arbitrary and would prevent Chorus from maintaining its financial capital in real terms.

Residual value

130. We disagree with the Commission's suggestion to set a cap on the maximum copper asset values transferable to fibre; i.e. where the expected residual value of that copper revenue is transferred to fibre revenue:
- 130.1. Assets may still be used in future, if only to a lesser extent. For example, in areas where Chorus has built UFB, shared assets are expected to be re-used. While in other areas, network assets may be used less; and
- 130.2. Such an approach is inconsistent with the Commission's acceptance to use Chorus' statutory accounts. Accepting Chorus' statutory accounts means whether or not the asset is impaired is defined by the accounts, not by some additional exercise that is inconsistent with the accounts.

Application of shared cost cap to the pre-implementation period

131. We interpreted the Commission's previous drafting of the shared cost cap to mean FFLAS should not include any costs that were incremental in the provision of services that are non-FFLAS. When considering a new service this is supported by economic rationale, as such a cap would avoid economic cross-subsidisation, meaning that a new service would be allocated costs bound between incremental cost (lower limit) and standalone cost (upper limit).
132. However, it is unclear whether the Commission's revised drafting ("*could not have avoided*") refers to incremental and/or common costs that Chorus incurred. Either way, a discretionary decision by the Commission on what costs are unavoidable in the supply of FFLAS (e.g. an efficiency adjustment) isn't economically justifiable.
133. We also have concerns with the workability of applying a shared cost cap to the pre-implementation period. Application of the shared cost cap is speculative in determining what costs could have been avoided if copper wasn't provided:
- 133.1. A world without copper would be considerably different, where avoided costs would be complex as some costs could be saved while other costs would be incurred; and

- 133.2. Chorus has been transitioning to fibre since 2012, so it would be difficult to pin down a point in time the actual needs of a fibre business.
134. We note that the Commission intends on applying the shared cost cap to pre-2011 costs.⁶⁶ As we have previously noted,⁶⁷ if the Commission continues with the cap on shared costs it should meet the conditions below (our proposed drafting for these is in Appendix 2):
- 134.1. Only be used for new services. The ordinary objective of these type of tests is to assess whether a new (usually unregulated) service will bear at least the incremental cost that it causes;
- 134.2. Not apply retrospectively. Applying a shared cost cap to copper costs does not provide any additional incentives to reduce cost, as they are largely unavoidable; and
- 134.3. Be based on objective data, rather than hypothetical scenarios; i.e. the cap should only apply where there is data to show shared costs are avoidable.

List of default proxy allocators

135. We agree with the Commission's decision to include "used length of linear assets", "power usage", "number of events" and "any other allocator type as approved by the Commission" to the list of allocator types available in Schedule B.⁶⁸ As we have previously submitted, equi-proportional mark-up should also be included.⁶⁹

7. OTHER MATTERS

Non-standard installation fund

136. The Commission has decided that the non-standard installation (**NSI**) fund should be netted off the RAB as a capital contribution, which it assumes is up to \$20m.⁷⁰ We disagree on the facts assumed by the Commission in its treatment of the NSI fund but propose to engage further with the Commission during the PQ determination process. In order to account for the value of the NSI fund that could be treated as a capital contribution we are proposing to remove reference to the \$20m value. Our proposed drafting is in Appendix 2.

⁶⁶ Commerce Commission, (13 August 2020), *Fibre input methodologies: Further consultation draft initial value of financial loss asset – reasons paper*, at [2.96.4].

⁶⁷ Chorus, (3 September 2020), *Chorus cross-submission on the Commerce Commission's fibre input methodologies – further consultation draft reasons paper*, at [34].

⁶⁸ Commerce Commission, (13 August 2020), *Fibre input methodologies: Further consultation draft initial value of financial loss asset – reasons paper*, at [4.19].

⁶⁹ Chorus, (28 January 2020), *Submission on Fibre input methodologies: Draft decision – reasons paper dated 19 November 2019 and Draft fibre input methodologies determination 2020 dated 11 December 2019*, at [167.5].

⁷⁰ Commerce Commission, (23 July 2020), *Fibre input methodologies: Further consultation draft – reasons paper*, at [3.64].

Post-tax vs vanilla cost of capital

137. As part of moving from a BBM to DCF methodology the Commission has proposed using a post-tax cost of capital in order to simplify the calculation.
138. We recommend the Commission instead use a vanilla cost of capital. If applied correctly and consistently, a calculation that uses a post-tax cost of capital and one that uses a vanilla cost of capital will have identical answers. However, our preference for the vanilla cost of capital reflects the fact that this form of cost of capital provides for a more transparent calculation when tax losses are being made.
139. To this end, we are concerned that the Commission has proposed using a post-tax cost of capital under the assumption that this is simpler because it will avoid the need to calculate the interest deductions available for tax purposes in the pre-implementation period.
140. But this assumption is false – as the Commission has acknowledged, the post-tax cost of capital assumes that interest deductions can be immediately used, and so will overstate the benefit of these deductions where the firm is in a tax loss position after considering the interest deductions. And our modelling suggests that tax losses will be made for much of the pre-implementation period, given the substantial capital expenditure undertaken and so resulting high tax depreciation deductions.
141. Testing whether the firm is in a tax loss position requires the implied interest deductions to be derived, which means that there is little difference in the complexity of the calculations between the use of a vanilla or post tax cost of capital.
142. From the above discussion it is essential that the potential for tax losses to accrue – and so for a test for losses and the required adjustment – be included within the model that is used to calculate the FLA. This should not be treated as an afterthought that can be remedied through a later amendment to the IMs.
143. Rather than propose detailed drafting as to how the test should be undertaken, we have shown how the Commission’s loss asset model could be expanded to conduct this test in the workbook attached to our submission (Appendix 3). The workbook also shows how this could be done for either the post-tax cost of capital or vanilla cost of capital.
144. Our model also reflects that when the interest deduction is incorporated into the cost of capital, the interest deductions that are implied by this treatment tend to be much more extensive than the Commission ordinarily assumes. Specifically, intra-year cash flows are implicitly assumed to generate interest deductions, rather than just the opening RAB. Consistency requires these more extensive deductions to be estimated when testing whether the firm is in a tax loss position. This aspect of the Commission’s cost of capital is incorporated into our proposed calculations.

Approach to interest during construction

145. We also agree with the revised decision to include the cost of interest during construction in asset values used for the initial RAB.⁷¹ This is a workable solution

⁷¹ Commerce Commission, (13 August 2020), *Fibre input methodologies: Further consultation draft initial value of financial loss asset – reasons paper*, at [3.53].

which reduces complex data re-work⁷² and helps ensure asset values reflect actual cost and are consistent with GAAP.

Forecast used for the initial RAB

146. We agree that there is a need to include a transitional provision in order to calculate the FLA for the initial price-quality RAB. Statutory accounts covering the entire pre-implementation period will not be ready until after the implementation date and therefore forecasts will be required to determine the FLA for the initial price-quality RAB.
147. However, actual data, not forecast values, should be used for financial loss year 2020. This is consistent with our previous submissions.⁷³ Using one less year of forecast will reduce the potential size of any forecast error. This approach is workable and robust as Chorus' audited statutory accounts will be available for use. We have proposed drafting to reflect this change in Appendix 2.

⁷² Chorus, (28 January 2020), *Submission on Fibre input methodologies: Draft decision – reasons paper dated 19 November 2019 and Draft fibre input methodologies determination 2020* dated 11 December 2019, at [106].

⁷³ Chorus, (13 August 2020), *Submission on Fibre input methodologies – further consultation draft reasons paper*, at [41].

APPENDIX 1: RESPONSE TO COMMISSION'S QUESTIONS ON COST ALLOCATION

Question	Response
Is there anything further that should be done in the IMs to be more certain about the appropriateness of cost allocation for pre-2011 assets in calculating the FLA?	No. The Commission's proposals already place a significant number of restrictions on such allocations.
Is there a 'rule of thumb' that could be applied for the purpose of cost allocation for pre-2011 assets in calculating the FLA	Rather than seeking a "rule of thumb" a better approach is to choose the right cost allocator and consistently use it. As previously submitted, consistency over time for cost allocation is critical, including pre-2011 assets.
Are there properties of pre-2011 assets that would impact the rules for cost allocation in calculating the FLA relative to post-2011 assets?	No. The fact that assets predate a specific date do not make them intrinsically "special".
Should there be a cap on the allocation of pre-2011 assets to the FLA during the transition period	No. The Commission's proposal already means cost allocation is highly constrained. We refer above to <i>Application of shared cost cap to the pre-implementation period</i> .

APPENDIX 2: PROPOSED DRAFTING CHANGES

1. Attached as separate document

APPENDIX 3: PROPOSED AMENDMENTS TO RULES FOR FLA CALCULATION OUTLINED IN WORKBOOK

1. The calculation that we propose to use to derive the FLA applying a vanilla WACC is in the form of a modification to the Commission's spreadsheet model and accompanies this submission as a separate attachment.
2. This has been done as a demonstration and while we're confident it is free from material error and therefore suitable for this task, it has not been subject to rigorous internal testing. It also applies some simplifications compared to the Commission's approach, to make the presentation simpler (e.g., we have not applied the 365.25 convention).
3. We also note the model doesn't do anything in relation to CIP. Under our position, CIP would attract a lower carry-forward rate and also be treated as avoided debt, which would need to flow into the interest and tax calculation. The method that we have applied to calculate interest in relation to the RAB assets (inclusive of losses) could be applied directly to the capitalised CIP balances, just with the different carry-forward rate and the balances assumed all to be avoided debt.
4. The calculations presented in that spreadsheet model have been derived to accommodate a different WACC being applied to the cash flows for each year, although Chorus' position is that a constant WACC should be applied over the period.
5. The key additional calculation that is performed in the model is the calculation of the interest deductions that are available for taxation. The assumptions made in the model are as follows.
6. Each year's cash flows (including the 2011 assets) are assumed to be financed (to the level of assumed leverage) at the cost of debt that is assumed for the WACC applicable to that year. The stock of debt created in each year is then assumed to grow from year to year as that year's cash flows are capitalised at the WACC. These assumptions are consistent with the implicit assumptions built into the Commission's proposal to apply a different WACC each year and to apply a post-tax WACC.
7. Interest in each period is assumed to be payable at the midpoint of the period to which it relates. For the first year of each vintage of cash flow, it is assumed that interest is payable for the proportion of time for which the cash flow is capitalised. A different first year interest rate has been applied for cost items (which are all assumed to be incurred mid period) from the revenue offset (which is assumed to be received 34 days after the midpoint of each period).
8. A slight adjustment has been made to the calculation of taxation to reflect the fact that the tax cost is part of cash flow, which will then affect the level of debt and so interest, and hence have a feed back into the tax calculation. The adjustment required is straightforward, and the fact that this generates the expected result is demonstrated.
9. Once annual interest deductions have been calculated, the post financing taxation liabilities can then be calculated, and losses treated in the standard manner. That is, where losses accrue, taxation in that year is set to zero and the losses are carried forward to be offset against future income.